UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Office of the Administrator
Washington 25, D. C.

February 2, 1955

To: Byron T. Shaw, Administrator
W. E. Morgan, Chairman, Production Economics Research Advisory Committee

From: Carleton P. Barnes, Executive Secretary
Production Economics Research Advisory Committee C P Barnes

Subject: Report and Recommendations of the Second Meeting of the Production Economics Research Advisory Committee, (December 6-8, 1954)

The Production Economics Research Advisory Committee met in Washington, D. C. on December 6-8, 1954. All members were present.

Dr. Shaw discussed the distribution of federal increases for agricultural research for fiscal year 1955. Dr. Sherman Johnson discussed some of the problems ahead which relate to production economics research. He mentioned, among other things, the Department's responsibility in research on problems transcending state boundaries, for which facts bearing on nationwide impacts of production adjustments are needed.

Undersecretary Morse, visiting the Committee during its discussion of research on problems of low-income farms, commented on the tendency of low-income rural families to engage in off-farm activities and the difficult nature of the adjustment problems on small farms. He felt that the problem of inadequate farm income should not be neglected. Assistant Secretary Peterson stressed the importance of the broad perspective our advisory committees can bring to the Department in their counsel on research needs.

The Committee requested that the Department help it become more fully acquainted with the work under way in production economics research by having future reports of progress include a statement of work under way and planned on each type of research activity and by more systematically providing the Committee with new publications that characterize the work.

The Committee expressed its thanks to the Department staff members who arranged and participated in the meeting, for the help and courtesies extended.

Members of the Production Economics Advisory Committee

W. E. Morgan, Chairman

Joseph Ackerman
Ernest R. Ahrendes
Cameron G. Garman
J. Bernell Harlan
H. Brooks James
Herbert F. Johnson
Leonard F. Miller
D. Gray Miley
Raymond J. Penn
Albert A. Thornbrough

Report of the Production Economics Research Advisory Committee

General

The Committee again emphasizes the need to increase the resources devoted to production economics research, not only to help farmers make sound management decisions in the years just ahead, but to provide the economic data needed to promote intelligent longer-time adjustment and devise effective public programs to help accomplish it. The transition from war-time to peace-time requirements for farm products confronts farmers with difficult problems of adjustment. The costs, returns, and other consequences of possible production alternatives need thorough investigation, so that costly mistakes may be avoided. Furthermore, research-based economic information will be especially needed by Extension agents in the new program of counselling on individual farm planning. It is needed also in helping farmers work out soil conservation plans.

The central problem in production economics research is that of providing information to guide management decisions so they will achieve a pattern of agricultural production consistent with prospective market needs and efficient use of resources. Nearly all of the new or expanded work recommended covers interrelated aspects of this central problem. Some is aimed directly at giving farmers information on the prospective costs and returns, and investment, credit and labor requirements of alternative farming systems, and on the economics of new practices or equipment. Other recommendations, fully as important, aim at improvements in such things as credit arrangements, farm tenure, tax laws and procedures, water laws and public assistance programs--improvements without which many desirable adjustments may be severely hindered.

Studies of farmers' production response to cost-price changes, as well as the factors that affect their response, are needed in the design of public programs that will facilitate adjustment. Cost analyses for major commodities in different types of farming are needed, too, for improvements in price support and production adjustment programs.

The interrelationship of the different lines of production economics research in contributing toward the central objective of production economics research makes it difficult for the Committee to distinguish among all of them as to priority of need.

Expanded effort should not, in the Committee's judgment, be confined to the solution of adjustment problems calling for immediate attention. Work that is basic to intelligent long-time adjustment and development in agriculture needs to be done without waiting for the development of critical situations to justify it. Some work of basic significance, done now, might help avert emergency situations later.

The Department is urged to study ways of getting research information in a form in which it will be more readily applied. There may be ways, for example, of "packaging" information resulting from economic analysis of farming adjustment opportunities,

including economics of adopting new practices and equipment, that would promote wider and easier use of research results. It is in production economics research where the benefits of combined applications are appraised, that we must look for this kind of "packaged" information to be developed.

Comments Regarding Work Under Way

The Committee is favorably impressed with progress reported on work under way. The emphasis in the research seems, in general, to bear an effective relationship to the magnitude as well as the urgency of problems needing attention.

The Committee urges the Department to continue its critical appraisal of the importance of work under way with a view to using available resources on research on the most important problems.

Recommendations for New or Expanded Work

Research on Profitable Adjustments in Farming

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(1) Adjusting Production to Changing Market Outlets. A much greater expansion is needed in economic research concerned with production adjustments on farms faced with a reduction in market outlets. The problem is even more urgent now than it was last year. Studies are needed in all of the type-of-farming areas where wheat, cotton, or butterfat is a major product and in other areas where the present systems appear to be disadvantaged in view of prospective changes in market demand.

(1) Effective Utilization of Public Assistance in Making Farming Adjustments. Economic research is needed to furnish an objective basis for guiding the development of cost-sharing and other public assistance programs for soil and water conservation. Studies are needed in different farming areas to determine (a) the effectiveness of different measures in attaining stated conservation and adjustment objectives and (b) the measures for which public assistance is needed, the level of such assistance, and the manner in which monetary and technical assistance can be used most effectively.

(2) Economics of Conservation Farming. Additional studies are needed of the prospective costs and returns from various recommended practices and from adoption of systems of farming that maintain or improve productivity of

1/ Recommendations are numbered either 1, 2, or 3, according to the indicated relative importance or urgency of the problem. Those numbered 1 are considered of the highest relative importance; those numbered 3, of the lowest. No distinction in importance is made among recommendations given the same number.

soil resources. These studies are particularly needed in areas where major changes in practices and crop or livestock systems are required to conserve soil resources and in areas where farms are small and capital resources are limited.

(2) Adjustment Problems on Low-Income Farms. Additional research is needed on the adjustment problems of low-income farms. In those areas where there are concentrations of low-income farms, studies are needed concerning: (a) the characteristics of the resources (including labor) and the farming systems which are found on these farms; (b) means of increasing the productivity and incomes from these farms; (c) the availability of labor for transfer to other employment.

(3) Farm Unit Research. Research on a farm unit basis should be initiated to integrate various soil, water, and related practices into practical and profitable farming systems. Farm unit or pilot farm research would provide a tool for determining the combination of practices that fit together in a farming system including the necessary adjustments in farm operations. It will also provide a basis for appraising the effect of the various combinations of practices on farm income. This type of research would help to fill the gap between the more detailed research findings and their application on the farm.

Research on Production, Income and Costs

(1) Production Response in Relation to Cost and other Changes on Important Types of Farms. Research is needed which will measure the flexibility in farming in important types of farming situations as to changes farmers make in kinds of products produced and substitution among factors of production, in response to cost-price and other changes. Analysis is also needed of the effects technological changes have had on output and efficiency. There is need for economic appraisal of responses in production to changes in cost-price conditions, especially in relation to rates of feeding and rates of use of other input factors. Such information is needed for policy decisions as well as for assisting farmers to achieve greater economic efficiency and can also be important in appraising future developments in agriculture.

(2) Changes in Output Per Unit of Input and Composition of Total Inputs. New work should be started on measurement and analyses of changes in overall productivity (output per unit of total inputs) on a national, regional, and major commodity basis. Striking and significant changes in productivity have been occurring. Analyses of these changes and relationships will permit a more direct and detailed analysis of output-input interrelations and the types of shifts likely to have highest priority from the standpoint of increase in agricultural efficiency and incomes.

(3) Costs and Returns Studies in Important Areas. New work should be initiated to develop costs and returns series of data for important types of farms not now included in order to obtain more complete coverage of agriculture in the United States. Types of farms for which such data are needed include: Cotton farms in the irrigated areas of the Southwest; poultry farms in the Northeast; irrigated crop speciality farms in the Intermountain region; cattle ranches and sheep ranches in the upland grazing area of Idaho and Montana; and general farms in the transition zone between the Cotton belt and the Corn Belt.

(3) Cost Analysis. Initiate research to determine the possibility of developing useful measures of costs of producing major commodities such as wheat, cotton, corn, and dairy products. Such information can contribute to appraisal of needs for special adjustment programs. Types of cost analyses that seem likely to give useful results include: (a) Production costs for major commodities in important type-of-farming areas, with specified returns for operator's labor and management; (b) ratio of prices received to cash-operating expenses per unit of production for representative farms in important type-of-farming areas; (d) costs for tenant farms as well as for owner-operator farms; (e) changes in real costs; and (f) changes in composition of costs and inputs from the nonfarm economy.

Resource Efficiency Studies

(1) New Machines and New Techniques for Handling, Curing, Drying and Storing Farm Products on the Farm. Economic research should be expanded on the use of new machines and techniques for handling, curing, drying, and storing farm products on the farm. There is rapid development of such devices and operations and knowledge of the economics of their use is needed to increase efficiency.

(1) Profitable Use of Fertilizers. Expansion is needed of work on the economics of fertilizer use applicable to major type of farming areas, and to important soil association areas within them. Properly designed fertilizer rate experiments are needed to build up a body of information applicable to major producing areas.

(1) Profitable Use of Feed and Forage. Research should be expanded to determine economic feeding rates for all classes of livestock, based on experiments using a sufficient range of feeding rates to make this possible. The economic limits of substituting forage for concentrate feeds and of substituting one kind of feed for another, needs analysis.

(2) Economics of Cotton Mechanization and Related Techniques. Economic research on cotton mechanization and related techniques should be expanded to keep abreast of fast-moving technology in order to provide farmers with information on the conditions under which these new techniques will and will not be profitable.

(2) Economics of Crop Rotations. There is need for a systematic appraisal of the total production that can be obtained from a range of crop rotations extending from extensive to intensive systems. Research on the economics of rotations is needed in order to properly evaluate the effect of crop adjustment programs on immediate and long-run farm income, to appraise the effect of conservation farming systems on farm income, and to furnish guides to most profitable farming systems.

(2) Economics of Intensive Grazing Practices. There is need for economic appraisal of new methods of intensive grazing being studied experimentally. Analysis of their profitableness under various practical circumstances is needed. For example, the relative economic advantage of strip grazing, rotation grazing, and usual grazing practices need study. Work should be carried on long enough to permit evaluation of livestock production from given land resources by the alternative methods, and the effect of grazing method on productivity and life of the pasture.

(2) Farm Structures. Additional economic research is needed on the problem of designing farm structures to provide the needed functional characteristics at lower investments and operating costs than in conventional buildings. The need is particularly great in areas where farmers will be facing new problems in the construction or remodeling of structures as a result of changes in farming.

(3) Power Used on Farms. The work in farm mechanization should be expanded to include an economic appraisal of power used on farms and the effect of changes in power on farm production and efficiency. Studies of proper economic balance of farm power and associated machines by size and type of farm, including off-farm work and dependence on custom operators, would furnish needed guides to farmers in equipping and operating farms.

(3) Basic Feed Statistics for Hogs. Basic data on feed consumed by hogs, especially supplementary feeds, need improvement. The significance of feed use by hogs is of sufficient economic importance to justify a major effort to improve the situation.

(3) Pasture Acreage Estimates. To provide an initial basis for estimating pasture production, acreage estimates by kinds of pastures should be obtained by States. Such data are greatly needed.

(3) Use of Farm Telephones. It is recommended that studies be made in selected areas, of the use of farm telephones and the amounts farmers are able and willing to pay for telephone service as an aid in the extension of rural telephone systems.

Research on Farm Labor Problems

(1) Relation of Labor to Farm Adjustment. Research needs to be devoted to the solution of problems of disrupted local farm labor forces resulting from advances in farm technology and production adjustment. Attention also needs to be given to ways of dealing with the problem of labor supply and demand conditions which may hinder or limit technological developments and production adjustments on farms.

(2) Farm Labor Requirements. Additional studies of labor requirements, particularly for truck crops and fruits, should be made. Data by type of farm, seasons of the year, and for different methods of harvest are needed to keep abreast of and measure the demand for labor on such farms. The data would be especially useful to those responsible for recruitment and placement of farm workers by measuring labor needs and indicating seasonal and regional shortages and surpluses of labor.

(2) Labor Surveys in Additional Areas. Labor surveys in additional problem areas are needed. Additional surveys would not only be useful from the local standpoint, but would help give a more complete understanding of the scope of farm labor problems in the national economy. In some areas, domestic supplies appear to be dwindling rapidly or are already inadequate. In other areas, supplies of surplus manpower exist. Of particular utility would be studies of the utilization of migratory farm workers in the Pacific coast and the central United States streams.

(2) Relation of Seasonality of Farm Work to Farm Mechanization. The effect of advances in mechanization on seasonality of farm work and possibilities of improving seasonal distribution of work through mechanization need investigation as an aid in developing measures to alleviate the problem. In many areas, the extremely seasonal nature of farm work prevents the effective utilization of farm workers on a year-round basis.

(2) Labor Management Practices. The relationship of management practices, living and working conditions, recruitment methods, labor pools, and other aspects of labor use to labor turnover and to the retention of existing labor supplies needs to be more adequately explored. Such studies should be of value in retaining existing supplies of farm labor.

(3) Labor for Farm Maintenance. Information is needed as to who does farm maintenance work and the time and costs involved. Information should also be obtained on the quantity of farm maintenance work done by farmers for other farmers. Farmers are continuously faced with the problem of whether to hire jobs done on a contract or custom basis or to do it with their own labor, which may involve purchase of additional equipment. Little is known regarding the decisions that farmers have made in the past regarding this problem.

(3) Data to Help Improve Programs for Foreign Labor Importation. Research is needed to get information on problems connected with recruitment and use of foreign farm labor, in order to develop better programs for its importation.

Farm Finance Research

(1) Tax Laws and Procedures and Need for Alternative Revenue Sources. Analysis should be initiated of the economic effects of tax laws and assessment procedures on the taxing capacity and revenues of local governments in rural communities, and of equitable alternatives that might provide necessary revenues.

(1) Risks in Farming. Additional studies should be made of long-time average yields and their variability, by crops, and by counties, particularly for tobacco, peanuts, flax, and other special crops. Further studies are also needed to measure total risk or production variability with different enterprise combinations, on farms representative of different areas and size classes.

(1) New Types of Credit Arrangements. Research should be initiated to explore new types of credit arrangements that would facilitate farming adjustments for particular farming types and situations.

(2) Survey of Financial Condition of Farmers. There is need for a national survey of the financial condition of different groups of farm operators. In addition to providing information on the farm assets, financial reserves, debts, net worth, and incomes of farm operators (classified by size and type of farm, tenure, years engaged in farming and other factors), the study would throw light on: (a) The capital needed to obtain given amounts of income from farms of various types; (b) the relation of ineffective use of assets and borrowing power to the problem of low-farm incomes; (c) the extent to which it may be difficult to rent farms that will produce satisfactory income; (d) the possible need for special credit facilities to serve certain classes of farmers.

(2) Tax Load of Farmers. Although progress is being made, additional information still is needed to determine adequately the total amount of the different kinds of taxes paid by farmers. There is a growing demand for more specific estimates of farmers' taxes -- data which can be utilized by farm newspapers and periodicals, private groups of farmers, farm policy makers in Government, and others who wish to analyze farm income and costs and to compare them with other economic groups.

(2) Economic Effects on Agriculture of Proposed Tax Measures. Increased effort should be placed on continuing studies of the probable economic and other effects upon farmers and agriculture of Congressional tax proposals and of

proposals by students of farm economics and nonfarm groups studying agriculture. These proposals cover the whole range of taxes levied at the Federal, State, and local level. Many of the proposals have direct and significant impact upon farmers and agriculture.

(3) Farm Insurance Methods. A survey of farm mutual insurance methods is needed to bring information up-to-date. Their practices have been changing rapidly in the last few years, and the accuracy of the annual operating statistics for these companies is dependent upon the longer period surveys.

(3) Distribution of Investment Income of Farm Mutual Insurance Companies. A study is needed of the distribution of investment income of farm mutuals, by types of investments. The safety funds of the farm mutuals have increased greatly within the last few years, making more funds available for investment. Although most State laws permit considerable latitude in investment procedure, idle funds are still largely carried in low-yield bonds. With a Federal income tax now applicable to the assessment income of farm mutuals having more than $75,000 of such income, it is becoming increasingly necessary for them to find investments of higher yield to offset the tax.

Research on Resource Use and Development Problems

(1) Economics of Water Use. The economics of irrigation and of irrigation systems and practices need much more attention. This applies both to ground and surface water developments. Where there are alternatives, the returns from such investments should govern the choice but the necessary economic information is frequently lacking. The economic aspects of practices that are apparently or potentially wasteful of water need study. Research in engineering and agronomy has developed equipment and methods so that supplemental irrigation is technically feasible under a wide range of conditions. The big question is under what conditions it will pay. This research should include costs of alternative systems, water sources, and kinds of power for pumping. Research in the economics of water use is especially needed in the 31 Eastern States in which farmers are increasingly asking for assistance on installing irrigation facilities.

(1) Water Laws. Research on water laws and regulations should be intensified in order to supply information concerning legislation that will permit orderly and dependable use of water for irrigation and other purposes. A major problem involved in the use of water for irrigation, for example, arises from the lack of any settled law in most Eastern States with respect to the right, or extent of the right, to use water for such purposes.

(2) Evaluation of Programs and Devices Used by Public Agencies to Promote Resource Development. Economic evaluation is needed of publicly-financed devices for land and water development and use. These include such measures as watershed treatment for flood reduction, flood control structures, stream-bank protection, channel improvement, drainage, and soil conservation measures. There is need to identify public (or offsite) and private benefits to enable equitable sharing of costs. The small watershed program recently authorized by Congress brings about an added need for economic analyses to serve as a guide for public and private investments, and to serve as a basis for equitable cost-sharing arrangements among beneficiaries.

(2) Procedures to Estimate Benefits and Costs of Resource Development. More adequate procedures need to be developed for measuring costs and benefits of public and private investments for resource development and improvement. There is special need for economic analyses of effects of resource change and development that involve long-time periods. More adequate research procedures are particularly needed for economic appraisal of irrigation, drainage, and watershed improvement projects where multiple objectives are involved. Procedures for identification and measurement of public and private benefits and costs are needed.

(3) Land Inventory. The work on inventories of land use should be expanded and kept current. Up-to-date information on acreage in different major land uses is needed to appraise production problems and opportunities. More information on production possibilities of land in different areas is needed. The Nationwide soil survey should be speeded materially to help provide such information. Data on ownership of land not in farms should be obtained, including data on its physical qualities and use potentialities. Estimates of our agricultural land requirements to be expected in the future should be improved and kept current.

(3) Costs of Land Improvement and Development. Research is needed to indicate costs of land improvement and development by drainage, clearing, and irrigation, and other means of land improvement to determine where and how funds may be most economically invested in land improvement and development.

(3) Urban and Industrial Expansion into Rural Areas. Studies should be initiated to provide needed guides as to how problems created by urban and industrial expansion into rural communities can be solved. Such development often results in tax levies that cannot be borne by operating farmers, in shifting of development costs to farm lands that are not ripe for suburban use, in financial difficulties for local governmental units, in absentee and speculative ownership of farm land, and in idle or poorly used agricultural land, and the possibly unnecessary sacrifices in good agricultural land to nonagricultural uses.

(3) Adjustment of Land Use to Land Adaptability. Research should be initiated to explore how the use of our land resources can be adjusted more closely to the uses to which they are suited. What are the economic and related factors presently helping or hindering such desirable uses? What might be done to stimulate the desirable uses and deter undesirable ones? In "Dust Bowl" areas, for example, research should be undertaken to ascertain the kinds of measures that might help the shift from wheat to grass on lands poorly suited to cultivation, and on means to keep the plowup of unsuitable lands from happening again.

Research on Land Values and Land Tenure

(1) Getting Established in Farming and Improvement of Farm Rental Arrangements. The large increases in capital requirements for getting started in farming point to the need for additional study of how young people can get started in farming without substantial financial or other help from the family. The processes by which capital can be accumulated for initial investment need study. The requirements of initial investments in terms of physical items, as well as in dollars alone, should be known. Ways to protect against over-investment in times of inflated prices warrant attention. Research is needed to indicate how farm leases can be improved, in view of recent changes in agricultural technology and economic conditions, in the interest of better husbandry, and therefore of both landlord and tenant.

(2) Relation of Crop Control Programs and Tenure. Research is needed on the increasingly significant problem of the interrelated impacts of Government crop programs and the tenure system. The basic objectives of research in this area would be to provide information needed in designing Government programs so that: Programs developed to help farmers would contribute the maximum to the attainment of desired tenure goals consistent with other objectives of such programs; tenure obstacles to the attainment of the objectives of the programs would be treated so as to minimize adverse tenure impacts; and benefits of Government programs would accrue primarily to farm operators.

(2) Effects of Social Security Laws on Farm Tenure and Transfer. Studies should be undertaken of the effects of the social security laws on tenure, transfer and inheritance of farms and on the economic and social impacts of these effects. This work should be carried on in cooperation with the regional land tenure committees.

(3) Land Earnings and Land Prices. Research should be initiated to provide a better understanding of the land pricing process and of the manner in which the land market functions in the allocation of productive resources. Studies to determine land income, by areas and over time, and the development of better appraisal procedures would contribute to this objective.

Research on Economics of Forestry and Timber Production

(2) Economics of Timber Production. There is need for an expanded economics research program to provide basic knowledge on the costs of timber growing and the monetary and other benefits derived from forest management and utilization in different forest regions. Studies are needed of various sized holdings to determine methods of forest management yielding the greatest financial returns. Guides to profitable timber utilization need to be further developed to aid forest landowners in determining the most profitable products and possibilities of lowering production costs through improved logging methods and new equipment.

(2) Evaluating Multiple Uses of Forest Land. Research should be undertaken to develop better criteria for evaluating possible integration of timber, forage, recreation and watershed uses of land.

(2) Forest Credit, Insurance, and Taxation. Additional study is needed of the amount and kind of forest credit and insurance needed to stimulate expanded forestry programs, the effectiveness of credit facilities now available, and methods of making forest credit and insurance against fire and other causes of loss more generally available to forest landowners. Studies of forest taxation that take into account the long-term nature of timber production, including local property taxation, special forest tax laws, and Federal income tax are likewise needed.

(3) Forest Survey. The Forest Survey should be accelerated in order to meet the growing demands of public agencies and various private groups for up-to-date facts on the Nation's forest land and timber resources. Research in the use of aerial photographs and other modern techniques for improving the efficiency of the Survey also needs to be strengthened.

Research on Marketing Forest Products

While recognizing marketing research as being outside its area of consideration, the Committee again recommends expansion of research on markets and prices for forest products in view of the widespread need of farmers and other small landowners in many sections of the country for better knowledge.

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In addition to the recommendations for new and expanded work on forest economics, the Committee suggests that forest economists should participate in any evaluation of watershed development and conservation measures undertaken by the Department.